

REMARKS

These remarks are responsive to the non-final Office action dated March 8, 2007. Claims 50–59 and 61–66 are pending in the application. In the Office action, the Examiner maintained the previous rejection of all of the pending claims as being obvious under 35 U.S.C. §103(a):

- Claims 50–52, 54, 55, 57, 59, and 62–65 were rejected over U.S. Patent No. 6,287,774 to Nikiforov ("Nikiforov") in view of Zhou, et al. "Detection and Sequencing of Phosphopeptides Affinity Bound to Immobilized Metal Ion Beads by Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry", *J. Am. Soc. Mass Spectrom.*, 2000, 11, pp. 273-282 ("Zhou");
- Claim 56 was rejected over Nikiforov in view of Zhou and further in view of U.S. Patent No. 6,022,708 to de Sauvage et al.;
- Claims 53, 58, and 66 were rejected over Nikiforov in view of Zhou and further in view of U.S. Patent No. 5,424,190 to Fuller; and
- Claim 61 was rejected over Nikiforov in view of Zhou and further in view of U.S. Patent No. 5,776,487 to Maxfield Wilson et al.

Applicants had argued, in their response to the previous Office action, that the use of gallium provides unexpected benefits that are strong and sufficient evidence of the nonobviousness of the rejected claims, in particular, that it: (1) enhances intensity, instead of quenching intensity like iron, and permits detectable emission of about one-hundred fold more light from a bound, exemplary luminophore; (2) has a much greater dynamic range of polarization, and thus allows for more robust and easy to perform assays than those employing iron; and (3) can better distinguish the existence of product than iron since product bound to gallium will contribute more rather than less to the total polarization.

The Examiner found persuasive applicants' arguments that the cited references do not provide any teachings of these benefits. However, the Examiner requested additional evidence that the benefits are unexpected. In support, applicants are enclosing herewith an article titled "Quenching of Excited Singlet States by Metal Ions" that systematically investigates and reports quenching rates for many metals. (Kemlo, J.A. and Shepherd, T.M. Chem. Phys. Letts. 47:158-162 (1977).) The Introduction to the article further indicates, with citations to several sources, that quenching by metal ions and complexes has been widely studied (and therefore would have been widely known). Significantly, the majority of the metals studied in the article, including iron, were quenchers (see, e.g., Table 1). More importantly, none of the metals studied was found to enhance fluorescence, as applicants reported for gallium. Thus, the benefits provided by gallium were indeed unexpected.

The unexpected benefit of increased luminescence intensity provided by gallium both enables the claimed assay and rebuts any assertion of *prima facie* obviousness by the Examiner. Therefore, for at least the reasons stated above and in their previous response to Office action, applicants respectfully request withdrawal of the rejections under 35 U.S.C. §103(a) and prompt allowance of the pending claims.

Applicants believe that this communication is fully responsive to the Office Action, and that the claims are currently in condition for allowance. However, if there are

any remaining matters, or if it would otherwise advance prosecution of the application, the Examiner is encouraged to call the undersigned attorney at (503) 224-6655.

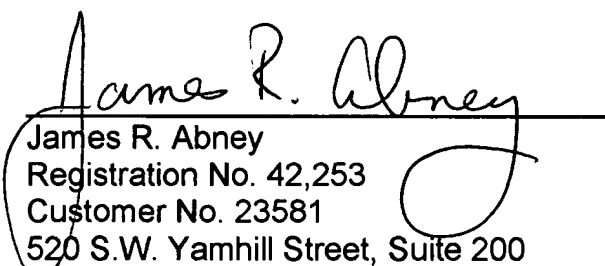
Respectfully submitted,

KOLISCH HARTWELL, P.C.

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on September 10, 2007.


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